

GPs' knowledge, use, and confidence in national physical activity and health guidelines and tools:

a questionnaire-based survey of general practice in England

Abstract

Background

Physical activity (PA) brief advice in health care is effective at getting individuals active. It has been suggested that one in four people would be more active if advised by a GP or nurse, but as many as 72% of GPs do not discuss the benefits of physical activity with patients.

Aim

To assess the knowledge, use, and confidence in national PA and Chief Medical Officer (CMO) health guidelines and tools among GPs in England.

Design and setting

Online questionnaire-based survey of self-selecting GPs in England that took place over a 10-day period in March 2016.

Method

The questionnaire consisted of six multiple-choice questions and was available on the Doctors.net.uk (DNUK) homepage. Quotas were used to ensure good regional representation.

Results

The final analysis included 1013 responses. Only 20% of responders were broadly or very familiar with the national PA guidelines. In all, 70% of GPs were aware of the General Practice Physical Activity Questionnaire (GPPAQ), but 26% were not familiar with any PA assessment tools, and 55% reported that they had not undertaken any training with respect to encouraging PA.

Conclusion

The majority of GPs in England (80%) are unfamiliar with the national PA guidelines. Awareness of the recommended tool for assessment, GPPAQ, is higher than use by GPs. This may be because it is used by other clinical staff, for example, as part of the NHS Health Check programme. Although brief advice in isolation by GPs on PA will only be a part of the behaviour change journey, it is an important prompt, especially if repeated as part of routine practice. This study highlights the need for significant improvement in knowledge, skills, and confidence to maximise the potential for PA advice in GP consultations.

Keywords

CMO guidelines; exercise; general practice; GPPAQ; physical fitness; questionnaires.

INTRODUCTION

The World Health Organization (WHO) describes physical activity (PA) as any bodily movement produced by skeletal muscles that requires energy expenditure.¹ Exercise is a subgroup of PA where the activity is planned, structured, repetitive, and aims to improve or maintain one or more components of physical fitness.¹

In 2011, the UK Chief Medical Officers (CMOs), as the statutory medical advisors to government, issued age-specific guidelines on PA for the general population.² Around one in two females and a third of males in England are not achieving the targets of these guidelines, and are damaging their health as a result. More than one in four females and one in five males are classified as 'inactive' by doing less than 30 minutes of PA per week.^{3,4} Physical inactivity is among the top 10 risk factors for disease and disability in England.⁵ It is an unsustainable situation, and is costing the UK an estimated £7.4 billion a year, including £0.9 billion of preventable costs to the NHS.^{6,7}

The UK guidelines are based on WHO standards, which have been adopted by most Western countries. International comparison suggests that UK citizens aged ≥15 years are more likely to be inactive than their counterparts in most comparable countries in the world.⁸ 63.3% of people in the UK fail to achieve a benchmark of activity, compared with 40.5% in the US, 37.9% in Australia, 32.5% in France, 28% in

Germany, and 18.2% in Holland.⁸

The UK guidelines are incorporated within clinical guidelines, including the 2013 National Institute for Health and Care Excellence (NICE) guidelines for brief PA advice, which recommends using the General Practice Physical Activity Questionnaire (GPPAQ) to identify those who are not meeting the guidelines and who should therefore receive the intervention.⁹ GPPAQ is a brief measure of PA in patients aged 16–74 years that is designed to take less than a minute to complete, and can either be completed by the patient themselves, or with the assistance of a healthcare professional.¹⁰ Patients are classed as inactive, moderately inactive, moderately active, and active. Those who rate less than active are deemed not to meet the national guidelines and so should receive an intervention from a healthcare professional. GPPAQ was integrated across GP clinical information technology (IT) systems in England to support primary care staff using a validated tool to assess PA and promote behaviour change. It also forms part of the routine tools used in the NHS Health Check interview in England, which is primarily undertaken by other healthcare professionals, rather than by GPs themselves.¹¹

One in four people say they would be more active if advised by a GP or nurse.¹² Health professional-led PA interventions are very effective, with brief advice for PA having a number needed to treat of 12, up to 10

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How this fits in

Advice from a healthcare practitioner has been effective at getting individuals active, but many GPs do not discuss physical activity (PA) with their patients. This study found the majority of GPs (80%) are unfamiliar with the national PA guidelines. Use of tools to assess patient PA, such as the General Practice Physical Activity Questionnaire (GPPAQ), are within clinical guidelines and, though the majority of GPs are aware of them (70%), most do not understand or use them in practice, and are unconfident in raising the subject with patients. Knowledge of the guidelines increased the likelihood that a GP would know about the tools, use them, and raise the issue of PA with patients whose conditions could benefit. Provision of training on PA for GPs could increase patient behaviour change, resulting in improved clinical outcomes, as well as disease prevention.

times more effective than smoking brief advice.^{13,14} One study has shown 70–80% of professionals do not speak to patients about PA.¹⁵

Assessment and advice about PA as a routine part of healthcare services has been identified as one of the best investments for increasing PA.¹⁶ A study has also shown the importance of primary care behaviour change for PA to the UK achieving the WHO target of a 25% reduction in premature mortality by 2025.¹⁷

As with other brief advice, behaviour change is best supported by repeated routine enquiry and advice, supplemented by assessment tools to reinforce progress and achievement.^{9,18}

There are several patient-centred studies that have investigated awareness

of PA guidelines, beliefs about activity, and reasons for non-participation in exercise.^{19–21} However, there is only limited literature available on knowledge of PA measurement tools and guidelines by healthcare professionals. These papers are low powered, with small sample sizes ($n = 14\,231$ and $n = 177$, respectively) and are only regionally based.^{22–24}

The aim of this study was to assess knowledge, use, and confidence in PA guidelines and PA assessment tools by GPs. The specific objectives of this study were:

- to measure overall awareness of the national guidelines by GPs;
- to identify awareness by GPs of the tools available to support the guidelines;
- to measure understanding of GPs on how to use the tools;
- to assess how many GPs have undertaken training on the use of tools and interventions;
- to measure GPs' confidence in raising the issue of PA in consultations; and
- to identify whether, and with whom, GPs raise the issue of PA.

METHOD

Study design

The questionnaire-based study was commissioned by Public Health England (PHE).²⁵ Questions were compiled by an advisory panel including academics, policymakers, GPs with a special interest, and internal experts in PA and general practice. Questionnaire design, scripting, and quality assurance were conducted by PHE. Collection and processing of data were carried out by MedeConnect Healthcare Insight (MHI), the market research division of the Doctors.net.uk (DNUK) group.²⁶

The study was conducted between 16 March and 26 March 2016. The questionnaire was available at any time during this time period from any computer. The questionnaire had a multiple-choice question (MCQ) format, where one or more answers could be provided to each of six questions (Box 1).

Individuals were given the option to leave more detailed comments for each question. Answers were automatically saved, which meant the questionnaire was not required to be completed in one sitting. Demographics also had to be provided.

The survey was live on the DNUK website, with an invitation placed on the homepage of all GPs who visited the website during the study period. Participation was by choice of the individual.

Box 1. Six questions from the study questionnaire

1. How familiar or unfamiliar are you with the Chief Medical Officers' physical activity (PA) guidelines?
2. Which, if any, of the following tools are you aware of to help assess patient PA? And which do you use?
3. How well do you feel you understand how to use these tools in day-to-day practice?
4. Which, if any, of the following training sessions have you undertaken with respect to encouraging PA?
5. How confident or unconfident would you describe yourself in terms of raising PA with your patients?
6. For patients with which of the following conditions would you discuss and recommend PA to?

Quotas were used to ensure good regional representation and to mitigate regional variation in local initiatives. Quotas were based on the last workforce data showing geographical distribution of GPs through strategic health authorities. Once a quota was completed it was closed, so that no more GPs from that area could begin the survey. All GPs who were already in the process of completing the survey were allowed to finish it, and were included in the final sample.

The survey aimed to reach a minimum sample size of around 1000 GPs to allow enough power in the study for analysis. A financial incentive was offered to encourage individuals to take part in the survey. Responders were only able to complete the questionnaire once, as the DNUK system only allowed a particular user to interact with the survey once.

Inclusion criteria

Responders were drawn from the DNUK community of General Medical Council (GMC)-registered doctors. Membership of DNUK required a GMC registration number, where members were matched to the monthly GMC register. Only GP partners, salaried GPs, GP registrars, and locum GPs who were based in England were invited to participate.

Exclusion criteria

Doctors in Scotland, Wales, and Northern Ireland were ineligible. Those who did not fully complete the questionnaire or answered a question that contradicted the inclusion criteria were excluded. When a regional quota was reached, no further responders from that region could participate. Non-

doctors, and doctors who were neither GPs nor GP registrars, were ineligible.

Data analysis

Data from each of the six MCQs were cross-matched against each other and also with the demographics to allow identification of any correlations. The *t*-test and 95% confidence intervals (CIs) were used to assess whether differences in results between the different demographic groups were significant.

RESULTS

Sample demographics

During the period when the study took place, the total GP membership giving a working address in England was 47 761. Of these, 11 654 GPs visited the DNUK website on at least a weekly basis. A total of 1415 GPs accepted the invitation to take part in the survey. Of these, 289 were excluded for not fully completing the questionnaire. A further 46 were then excluded for either providing contradictory answers in the survey (for example, reporting that they were both familiar and unfamiliar with guidelines), or if their answers indicated that they no longer met the criteria for inclusion, and 67 were unable to take part as their regional quota had already been met. The final analysis included 1013 responses.

Most responders were male (57%, $n = 581$), GP partners (61%, $n = 620$), aged between 30 and 39 years (36%, $n = 369$), working in a practice with six GPs (range 1–30), had a patient population of 8994 (range 500 to 40 000), based in London (12%, $n = 120$), in an urban area (42%, $n = 429$), did not take an active part in their clinical commissioning groups (CCGs) (61%,

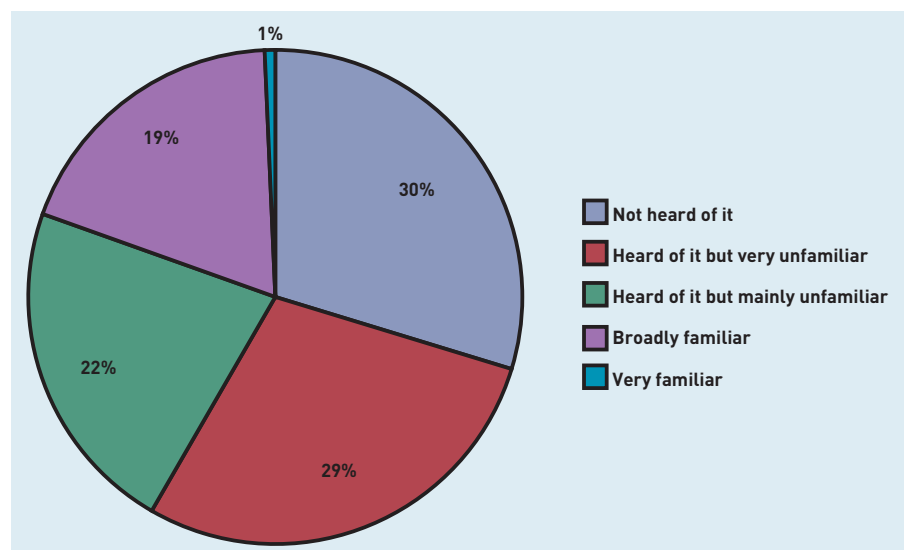


Figure 1. Familiarity of GPs with the Chief Medical Officers' physical activity guidelines.

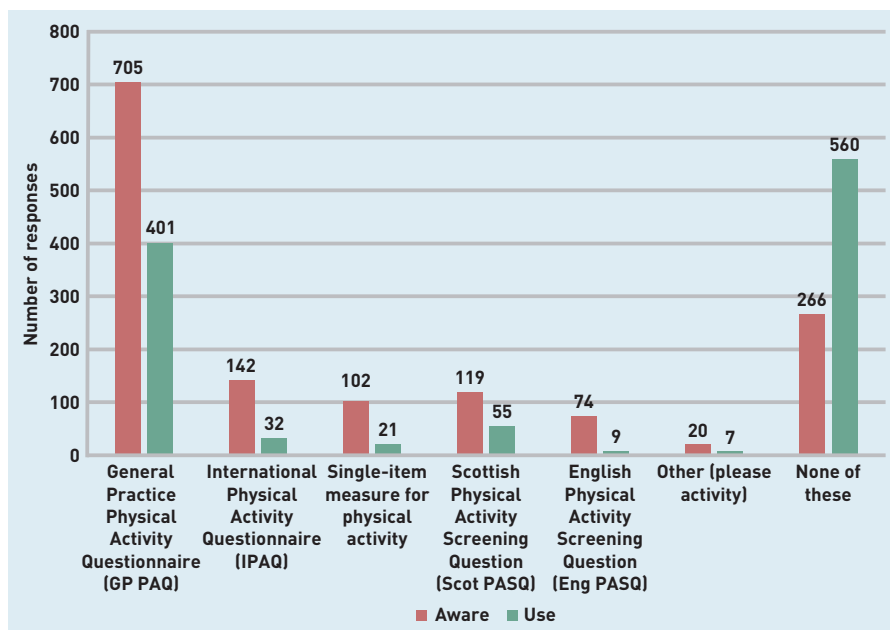


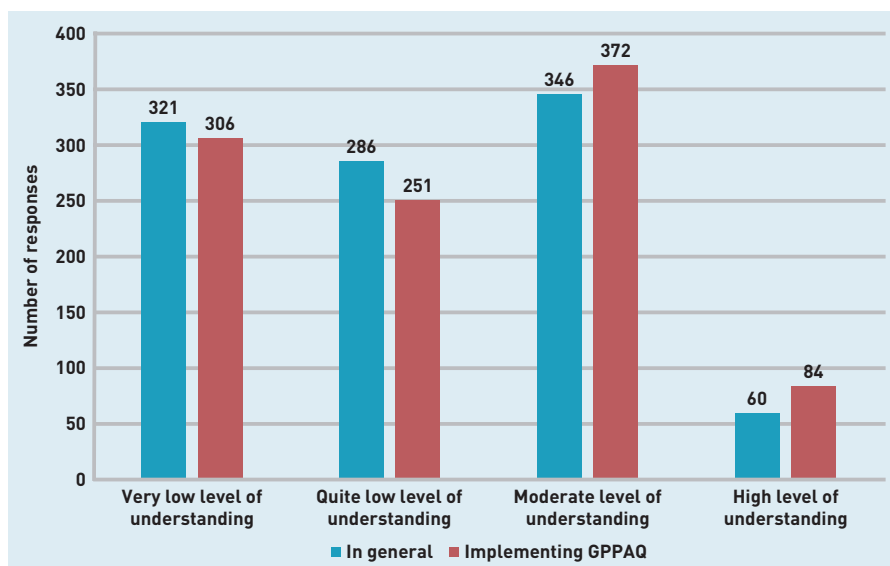
Figure 2. Awareness and use of physical activity (PA) tools by GPs.

$n = 613$), and did not work in a dispensing practice [82%, $n = 830$]. The mean year of qualification from medical school was 1995 (range 1968 to 2010).

Overall awareness of the national guidelines

Of the GPs who responded, 20% ($n = 198$) were broadly or very familiar with the national PA guidelines (Figure 1), whereas 30% ($n = 301$) had not heard of the guidelines, and 51% ($n = 514$) said that they had heard of them but were broadly unfamiliar or very unfamiliar with their content. The survey asked specifically about the guidelines, rather than guidance that referenced them (for example, NICE guidelines), in order

Figure 3. Comparison of the understanding of physical activity tools in general and GPPAQ specifically. GPPAQ = General Practice Physical Activity Questionnaire.



to understand the knowledge confidence around the age-specific recommendations for PA.

Awareness of the tools available to support the guidelines

In all, 70% ($n = 705$) of GPs were aware of the GPPAQ, but 26% ($n = 266$) were not familiar with any tools at all (Figure 2). There was a statistically significant difference ($P = 0.03$) in knowledge of tools between those who were aware of the national guidelines and those who were not. Although 40% ($n = 401$) reported that they actually used GPPAQ in their clinical practice, 55% ($n = 560$) said that they did not use any tools at all. The percentage of GPs who were aware of and using GPPAQ was statistically higher ($P = 0.04$) among GPs who also said that they were familiar with the national guidelines. Conversely, those who were not aware of the CMO guidelines were also less likely to know about or use any tools ($P = 0.04$).

Understanding how to use PA tools

In general, 41% ($n = 406$) of GPs had a moderate or high level of understanding of PA measuring tools, but only 8% ($n = 84$) had a high level of understanding on how to implement GPPAQ specifically (Figure 3). Those who were more familiar with the national guidelines were more likely to have greater understanding and be more confident in discussing PA with patients.

Confidence in raising the issue of PA in consultations

In all, 43% ($n = 439$) of GPs were somewhat confident in raising the issue of PA with a patient, whereas 16% ($n = 165$) were either somewhat or very unconfident. Unsurprisingly, almost double the proportion of doctors in the group who were not familiar with the guidelines reported being unconfident when raising the issue with patients, compared with those in the group who were familiar.

Training on the use of tools and interventions to support increased PA

A total of 55% ($n = 555$) of GPs reported that they had not undertaken any training with respect to encouraging PA. Of those who had received some training, 20% ($n = 202$) were trained in use of the GPPAQ, and 18% ($n = 180$) had received training on how to deliver brief interventions to encourage patient PA.

Groups of GPs who advise different cohorts of patients on PA

In terms of specific comorbidities, 15%

Table 1. Conditions for which GPs^a would discuss and recommend physical activity to patients

	Responses	
	<i>n</i>	%
Overweight (BMI >25 and <30)	787	78
Type 2 diabetes	744	73
Mild or moderate depression	720	71
Weight maintenance following weight loss	712	70
Hypertension	710	70
Osteoarthritis and other joint pain	683	67
Distress, stress, or anxiety	656	65
Chronic fatigue	623	62
Reduced bone density/risk of bone fracture	621	61
Muscular/joint pain	621	61
COPD	543	54
Hypertlipidaemia	540	53
Sleep disorder	523	52
Post-stroke	461	46
Asthma	432	43
Post-natal	373	37
Continuation during pregnancy	357	35
Before pregnancy (pre-conception advice)	312	31
Dementia or other cognitive decline	262	26
Irritable bowel syndrome	256	25
Substance misuse withdrawal	190	19
Initiation during pregnancy	154	15
With diagnosed cancer	151	15
Other (please specify)	6	1
I rarely discuss physical activity with my patients	25	2
I never discuss physical activity with my patients	2	0
I discuss it with all my patients	153	15

^aTotal amount of GPs = 1013. COPD = chronic obstructive pulmonary disease.

(*n* = 151) of clinicians familiar with the national guidelines reported that they would recommend PA to patients with diagnosed cancer (Table 1). This is interesting, as there has been a sustained campaign by Macmillan Cancer Support (the UK's leading source of cancer support) to promote PA.²⁷ Clinicians not familiar with the national guidelines were significantly (*P* = 0.05) less likely to advise PA to patients with a multitude of disorders (Table 1).

Awareness in different types of GPs

Awareness of both the guidelines and GPPAQ increased as practice size increased (*P* = 0.04), but levels of use of GPPAQ remained broadly similar. This may reflect the greater diversity of practitioners in larger practices. Locum GPs were less likely to be aware of GPPAQ than either GP partners or

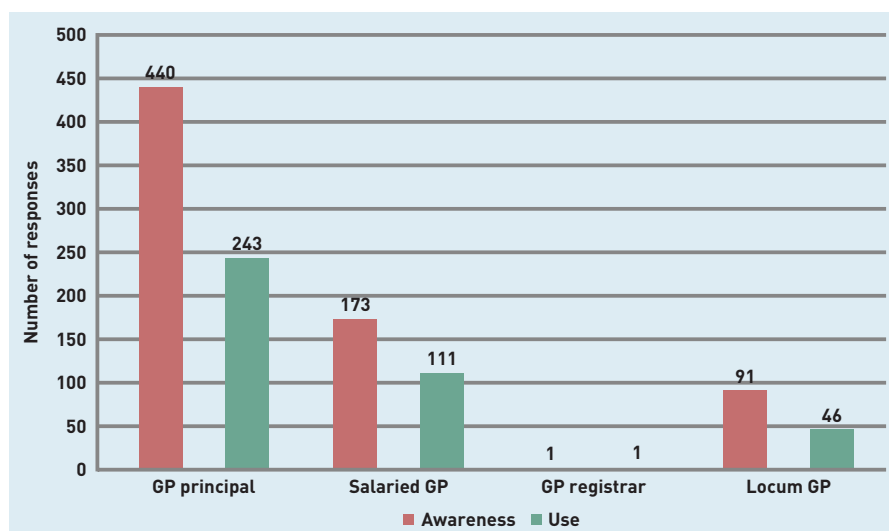
salaried GPs, but level of use was similar (*P* = 0.02) (Figure 4). A larger proportion of the salaried GPs and GP registrars reported specific training on PA than partners or locum GPs (Table 2). In addition, practitioners in age groups 30–39 years and 40–49 years were more likely to be aware of PA assessment tools than those in age groups 50–59 years or ≥60 years.

DISCUSSION

Summary

This study suggests that the majority of GPs are unfamiliar with the national PA guidelines. Predictably, those more familiar with the guidelines reported increased confidence in raising the issue with patients, as well as increased understanding and use of PA tools in a clinical setting. Many of those not familiar, however, did have some

Figure 4. Awareness versus use of GPPAQ by different types of GPs. GPPAQ = General Practice Physical Activity Questionnaire.



awareness of the existence of PA tools, especially the GPPAQ. Although the GPPAQ is an internationally validated tool, this study reflected a complex relationship where awareness was much higher than use. The cause of this is multifactorial, with limited consultation time, time constraints due to complex presenting problems, inadequate training, and perceptions of poor patient compliance being some of the reasons.²²

Up until 2014–2015 there was a financial incentive to primary care in England to use GPPAQ to record patient PA under the hypertension Quality and Outcomes Framework (QOF).¹⁰ Potentially, removal of this incentive may have impacted on use of the GPPAQ, as studies have demonstrated that inclusion of a health parameter within

a QOF leads to an improvement in care.²⁸ Conversely, the GPPAQ was only included in the QOF for 1 year, and so the effect of incentivisation is not fully known.

The results imply that the lack of skills, knowledge, and confidence in the guidelines may have been due to most responders not having had any form of training.

Strengths and limitations

The anonymity of responders encouraged participants to answer the questions honestly. However, some GPs may have struggled to admit lack of confidence in raising issues of PA, even to themselves, and therefore answers may not be truly reflective. GPs who were PA enthusiasts were more likely to participate in the

Table 2. Training sessions regarding physical activity undertaken by different types of GPs

	GP principal		Salaried GP		GP registrar		Locum GP	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Using GPPAQ in practice	119	19	53	22	1	50	29	19
Delivering brief interventions to encourage patient physical activity	97	16	47	20	0	0	36	24
Motivational training	75	12	43	18	0	0	26	17
Use of physical activity assessment tools	39	6	13	5	0	0	8	5
CCG training session on physical activity	34	5	14	6	0	0	11	7
In-practice training session on physical activity	25	4	15	6	0	0	11	7
RCGP-accredited CME module on physical activity	20	3	4	2	0	0	6	4
BMJ Physical Activity Module	16	3	7	3	0	0	5	3
Physical Activity Clinical Champions Programme	10	2	3	1	0	0	4	3
Other (please specify)	15	2	7	3	0	0	5	3
None of these	353	57	117	49	1	50	84	56
Total	620	100	241	100	2	100	150	100

BMJ = British Medical Journal. CCG = clinical commissioning group. CME = continuing medical education. GPPAQ = General Practice Physical Activity Questionnaire. RCGP = Royal College of General Practitioners.

survey. Therefore, this study may have underestimated the level of unfamiliarity of the CMO PA guidelines among all GPs.

Study limitations included a lack of GPs in training among responders. Younger participants appeared to be more familiar with guidelines, and more knowledgeable and confident when using PA tools and so, if more of the responders were doctors in training, this may have been reflected in the overall trends. Nurses and healthcare assistants, rather than GPs, conduct much of the preventive screening of patients in general practice. Thus, a major limitation of this study is that this group of individuals was not included.

Comparison with existing literature

There are several patient-centred studies that have investigated awareness of PA guidelines, beliefs about activity, and reasons for non-participation in exercise.^{19–21} However, there is only limited literature available on knowledge of PA measurement tools and guidelines by healthcare professionals. These papers are low powered, with relatively small sample sizes and are only regionally based.^{22–24} To the authors' knowledge, this study is the first nationwide survey to comprehensively assess knowledge, use, and confidence in PA guidelines and tools of GPs.

Implications for research and practice

The knowledge and skills deficit identified by this study needs to be addressed in both undergraduate and postgraduate education, with more emphasis being put on PA in the

clinical curriculum. Some provisions already exist that aim to improve GP knowledge on PA modification. One such scheme is the peer-to-peer PA clinical champions teaching programme. This service, created and provided by PHE, provides free structured training to health professionals by health professionals, to improve the understanding of PA in clinical practice so they can integrate very brief advice into their day-to-day clinical practice.²⁹ To date, there have been six pilot regions focusing on doctors. The scheme is now being rolled out across the country, and expanded to allied health professionals. This is significant as, in the context of current pressures on general practice, the time required to even briefly discuss PA interventions is more likely to be available to the practice nurse or other members of the practice team than the GP.

Another teaching tool available is the online *BMJ* learning tool on 'physical activity in the treatment of long-term conditions'.³⁰ This is comprised of nine e-learning modules on PA and health, plus a motivational interviewing module. Only 2% and 3% of total responders in this survey had undertaken either of these sessions, respectively. More needs to be done to increase GP awareness of these and other training opportunities. Given the potential gain in both patient and population outcomes, PA is an area that is ripe for exploration in both primary and secondary care. Further research is needed to understand how to maximise GPPAQ use for routine consultation to assess health risk and improvement in PA among patients.

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Competing interests

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